

Application No.: 09/690,721
Group Art Unit: 2654

Attorney Docket No: 1999-0679

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of task classification using morphemes which operates on the a task objective of a user, the morphemes being generated by clustering selected ones of salient sub-morphemes or salient phone phrases from training speech which are semantically and syntactically similar, comprising:

detecting morphemes present in ~~the user's~~ an input communication from the user by utilizing an input speech recognizer, the input communication including verbal speech from the user; and

making task-type classification decisions based on the detected morphemes in the user's input communication, wherein

the input speech recognizer detects the morphemes present in the verbal speech from the user.

2. (Currently Amended) The automated task classification method of claim 1, wherein the morphemes include ~~at least one of verbal speech and non-verbal speech.~~

3. (Original) The automated task classification method of claim 2, wherein the non-verbal speech includes the use of at least one of gestures, body movements, head movements, non-responses, text, keyboard entries, keypad entries, mouse clicks, DTMF codes, pointers, stylus, cable set-top box entries, graphical user interface entries and touchscreen entries.

4. (Original) The automated task classification method of claim 1, wherein the morphemes are expressed in multimodal form.

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5-6. (Canceled)

7. (Currently Amended) The automated task classification method of claim 1, further comprising entering into a dialog with the user to obtain a feedback response from the user when a task-type classification decision cannot be made based on the input communication from the user.

8. (Currently Amended) The automated task classification method of claim 7, wherein entering into a dialog with the user to obtain a feedback response from the user when a task-type classification decision cannot be made based on the input communication from the user further comprises prompting the user is prompted to provide a feedback response includes additional information with respect to the ~~user's initial~~ input communication.

9. (Currently Amended) The automated task classification method of claim 7, wherein entering into a dialog with the user to obtain a feedback response from the user when a task-type classification decision cannot be made based on the input communication from the user further comprises prompting the user is prompted to provide [[a]] the feedback response that includes including a confirmation with respect to at least one of the a set of task objectives determined in the a task-type classification decision.

10. (Currently Amended) The automated task classification method of claim 1, wherein the input communication is routed based on ~~the~~ a task-type classification decision.

11. (Original) The automated task classification method of claim 10, wherein the task objective is performed after the input communication is routed.

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12. (Currently Amended) The automated task classification method of claim 1, wherein the method operates in conjunction with one or more communication networks, ~~the communication networks~~ including at least one of a telephone network, the Internet, an intranet, a Cable TV network, a local area network (LAN), ~~and or~~ or a wireless communication network.

13. (Original) The automated task classification method of claim 1, wherein the method is used for customer care purposes.

14. (Original) The automated task classification method of claim 1, wherein the classification decisions and corresponding user input communications are collected for automated learning purposes.

15. (Currently Amended) The automated task classification method of claim 1, wherein ~~the a~~ a relationship between the generated morphemes and ~~the a~~ a predetermined set of task objectives includes a measure of usefulness of [[a]] one of the morphemes to a specified one of the predetermined set of task objectives.

16. (Original) The automated task classification method of claim 15, wherein the usefulness measure is a salience measure.

17. (Currently Amended) The automated task classification method of claim 16, wherein the salience measure is represented as a conditional probability of [[the]] a task objective being requested given an appearance of the ~~morpheme~~ one of the morphemes in the input communication, the conditional probability being a highest value in a distribution of ~~the~~ conditional probabilities over the set of predetermined task objectives.

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18. (Original) The automated task classification method of claim 16, wherein each of the plurality of generated morphemes has a salience measure exceeding a predetermined threshold.

19. (Currently Amended) The automated task classification method of claim 1, wherein the relationship between the generated morphemes and the a predetermined set of task objectives includes a measure of commonality within a language of the morphemes.

20. (Currently Amended) The automated task classification method of claim 19, wherein the measure of commonality ~~measure~~ is a mutual information measure.

21. (Original) The automated task classification method of claim 20, wherein each of the plurality of generated morphemes has a mutual information measure exceeding a predetermined threshold.

22. (Currently Amended) The automated task classification method of claim ~~[[11]]~~ 1, wherein ~~the step of making~~ [[a]] task-type classification ~~decision~~ decisions includes a confidence function.

23. (Currently Amended) The automated task classification method of claim ~~[[11]]~~ 1, wherein the input communication from the user represents a request for at least one predetermined task objective from a ~~of the~~ set of predetermined task objectives.

24. (Canceled)

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25. (Currently Amended) The automated task classification method of claim ~~[[11]]~~ 1, wherein ~~each of the verbal and non-verbal speech are the input communication~~ is directed to one of the a set of predetermined task objectives and each of the verbal and non-verbal speech input communication is labeled with the one of the set of predetermined task objective objectives to which [[it]] the input communication is directed.

26. (Currently Amended) ~~[[A]] The method of task classification which operates on the task objective of a user, comprising:~~ claim 27, wherein the method comprises selecting salient phone-phrases from training speech and the morphemes are acoustic morphemes; generating acoustic morphemes by clustering selected ones of the salient phone-phrases which are semantically and syntactically similar; detecting acoustic morphemes present in the user's input communication; and making task-type classification decisions based on the detected acoustic morphemes in the user's input communication.

27. (Currently Amended) A method of task classification which operates on ~~[[the]]~~ a task objective of a user, comprising:

selecting salient sub-morphemes or salient phone phrases from training speech including verbal speech;

generating morphemes by clustering selected ones of the salient sub-morphemes or selected ones of the salient phone phrases which are semantically and syntactically similar;

detecting morphemes present in the user's an input communication from the user by utilizing an input speech recognizer to recognize the detected morphemes in the verbal speech; and

making task-type classification decisions based on the detected morphemes in the user's input communication.

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28. (Canceled)

29. (New) The method of claim 1, wherein the morphemes are acoustic morphemes.

30. (New) The method of claim 27, wherein generating morphemes by clustering selected ones of the salient sub-morphemes or selected ones of the salient phone phrases which are semantically and syntactically similar further comprises:

applying a ASR phone recognizer to verbal training speech to produce a plurality of candidate phone-phrases.

31. (New) The method of claim 30, wherein the ASR phone recognizer utilizes a phonotactic language model.